

CRAB SPIDERS (ARANEAE: THOMISIDAE) OF JALDAPARA WILDLIFE SANCTUARY, JALPAIGURI, WEST BENGAL - I<sup>1</sup>SUMANA SAHA<sup>2,3</sup> AND DINENDRA RAYCHAUDHURI<sup>2,4</sup><sup>1</sup>Accepted April 06, 2005<sup>2</sup>Entomology Laboratory, Department of Zoology, University of Calcutta, 35, Ballygunge Circular Road, Kolkata 700 019, West Bengal, India.<sup>3</sup>Email: sumu17@rediffmail.com<sup>4</sup>Email: dinendrar@rediffmail.com, dinendrar@yahoo.co.in

The paper deals with the thomisid spiders recorded so far from the Jaldapara Wildlife Sanctuary. Of these, *Canaricus (Indocanaricus) siltorsus* and *Xysticus bengdakus* are considered as new taxa. Hitherto unknown male morphs of *Misumena nicobarensis* Tikader and *Pistiis kalimpus* Tikader have also been recorded. Six species, namely *Canaricus khandalaensis* Tikader, *Misumena nicobarensis* Tikader, *Pistiis barchensis* Basu, *P. gangulyi* Basu, *P. roonwali* Basu and *P. sreepauchanii* Tikader, are identified as new for the state of West Bengal and one, *Thomisus bulani* Tikader, for the district.

**Key words:** Thomisid spiders, new subgenus, new species, new morph, new record, Jaldapara Wildlife Sanctuary, Jalpaiguri, West Bengal

## INTRODUCTION

Thomisid spiders of West Bengal, so far, are known to belong to subfamilies Misumeninae and Philodrominae (Tikader 1980; Biswas and Biswas 1992). Misumeninae is represented by 25 species under nine genera and Philodrominae by three species under two genera (Biswas and Biswas 1992; Saha and Raychaudhuri (2004). Philodrominae is now considered as a distinct family (Platnick 2003).

This paper deals with 11 thomisid spider species (Misumeninae) belonging to the genera *Canaricus* Thorell, *Xysticus* Koch, *Misumena* Latreille, *Pistiis* Simon and *Thomisus* Walckenaer recorded from Jaldapara Wildlife Sanctuary. Of these, two species each of *Canaricus* and *Xysticus* are considered new, and accordingly described and illustrated. The *Canaricus* species is accommodated under a new subgenus. Further, hitherto unknown morphs of *Misumena nicobarensis* Tikader and *Pistiis kalimpus* Tikader are also described and illustrated.

The specimens have been deposited in the collection of Entomology Laboratory, Department of Zoology, University of Calcutta.

## MATERIAL AND METHODS

Collection and preservation of the spider samples was carried out following Tikader (1987). The materials were studied using a stereo zoom binocular microscope. All the measurements are in millimetres, made with an eyepiece graticule.

1. *Canaricus formosus* Thorell

*Canaricus formosus* Thorell 1887. Ann. Mus. civ. stor. Nat. Gen. 5(2): 261.

**Material examined:** 1 ♂ ♀, Jaldapara, 7.iii.2002; 2 ♀, Moiradanga, 7.iii.2002; 3 ♀ ♀, DDG, 25.iii.2002; 3 ♀ ♀, Sissamara, 25.iv.2002; 1 ♀, TEC, 26.iv.2002; 4 ♀ ♀, Bengdaki, 27.iv.2002; 1 ♀, Kunjanagar, 27.iv.2002; 7 ♀ ♀, Hollong, 29.iv.2002; 3 ♀ ♀, Bania, 8.vi.2002; 2 ♀ ♀, 4 ♂ ♂, Chilapata, 8.vi.2002; 4 ♀ ♀, 1 ♂, Celine, 9.vi.2002; 2 ♀ ♀, Mendabari, Jaldapara Wildlife Sanctuary, Jalpaiguri, 9.vi.2002.

**Distribution:** INDIA: Andaman Islands, Karnataka, Maharashtra, West Bengal (Tikader 1980; Biswas and Biswas 1992; Platnick 2003); Bangladesh; China; Indonesia; Myanmar; Philippines; Sumatra (Tikader 1980; Platnick 2003).

2. *Canaricus khandalaensis* Tikader

*Canaricus khandalaensis* Tikader 1980. Fauna of India: Araneae: Spiders. Vol. 1, Pt. I Thomisidae: 177-178.

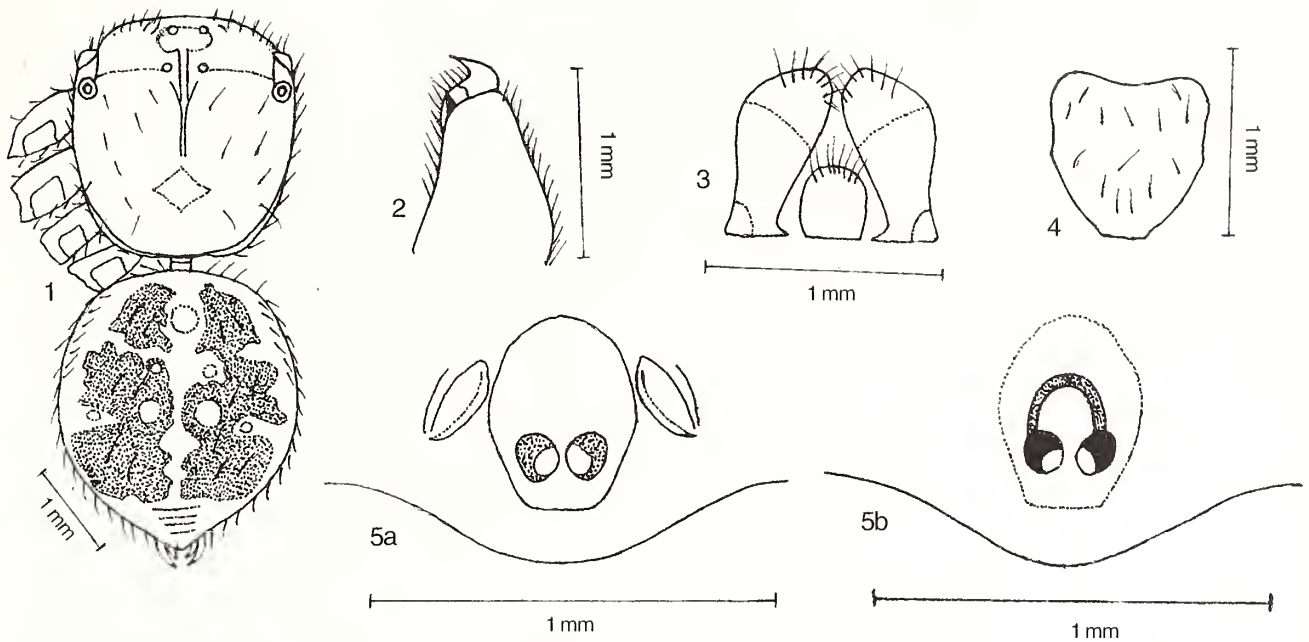
**Material examined:** 1 ♀, TEC, 26.4.2002; 1 ♀, Mendabari, 9.6.2002; 2 ♀ ♀, Celine, Jaldapara Wildlife Sanctuary, Jalpaiguri, 9.6.2002.

**Distribution:** INDIA: (Platnick 2003): Maharashtra (Tikader 1980), West Bengal (new record).

3. *Canaricus (Indocanaricus) siltorsus* n. gen. et sp. n. (Figs 1-5)

**Female:** Holotype: Total length 5.77; carapace length 2.58, width 2.38; abdomen length 3.00, width 2.54; legs as in Table 1.

Cephalothorax (Fig. 1) dark reddish brown, longer than wide, front wide, parallel-sided, thoracic region marginally



Figs 1-5: *Camaricus (Indocamaricus) siltorsus* n. gen. et. sp. n., female holotype  
1. Whole body, 2. Chelicerae, 3. Maxillae and labium, 4. Sternum, 5a. Epigynum, 5b. Internal genitalia

slightly laminate, medially slightly raised, clothed with dense black hairs; eyes transparent, in two rows, both rows recurved, laterals contiguous, eyes of anterior row basally ringed with black band, posteromedians smallest, ocular quad squarish, posteriorly wide; chelicerae (Fig. 2) reddish brown, robust, inner margin only with single tooth, fangs yellowish red, small, weakly curved; maxillae and labium (Fig. 3) brown, apically whitish, both elongate and anteriorly scopulate; sternum (Fig. 4) brown, heart-shaped, anterior margin concave, posteriorly truncate, with hairs; legs yellow, segments distally with brown band, robust, clothed with hairs and spines, femora distally with black patch, tibiae and metatarsi I & II provided with 3 pairs of ventral spines, leg formula 2341. Abdomen yellow with black patch (Fig. 1), medially with 5 brown sigilla, longer than wide, oval, widest behind the middle, clothed with black hairs; venter black with mid-longitudinal broad whitish band extending from epigastric furrow to near the base of spinnerets, with few brown sigilla, epigyne and internal genitalia (Figs 5a & 5b).

**Material examined:** Holotype: ♀, Siltorsa, 7.vi.2002;

Coll. S. Bhattacharjee. Paratypes: 1 ♀, Sissamara, 23.iii.2002; 2 ♀♀, Moiradanga, 27.iii.2002; 1 ♀, Siltorsa, 24.iv.2002; 1 ♀♀, Hollong, Jaldapara Wildlife Sanctuary, Jalpaiguri, 29.iv.2002 (Regn. No. EZC 0005-03).

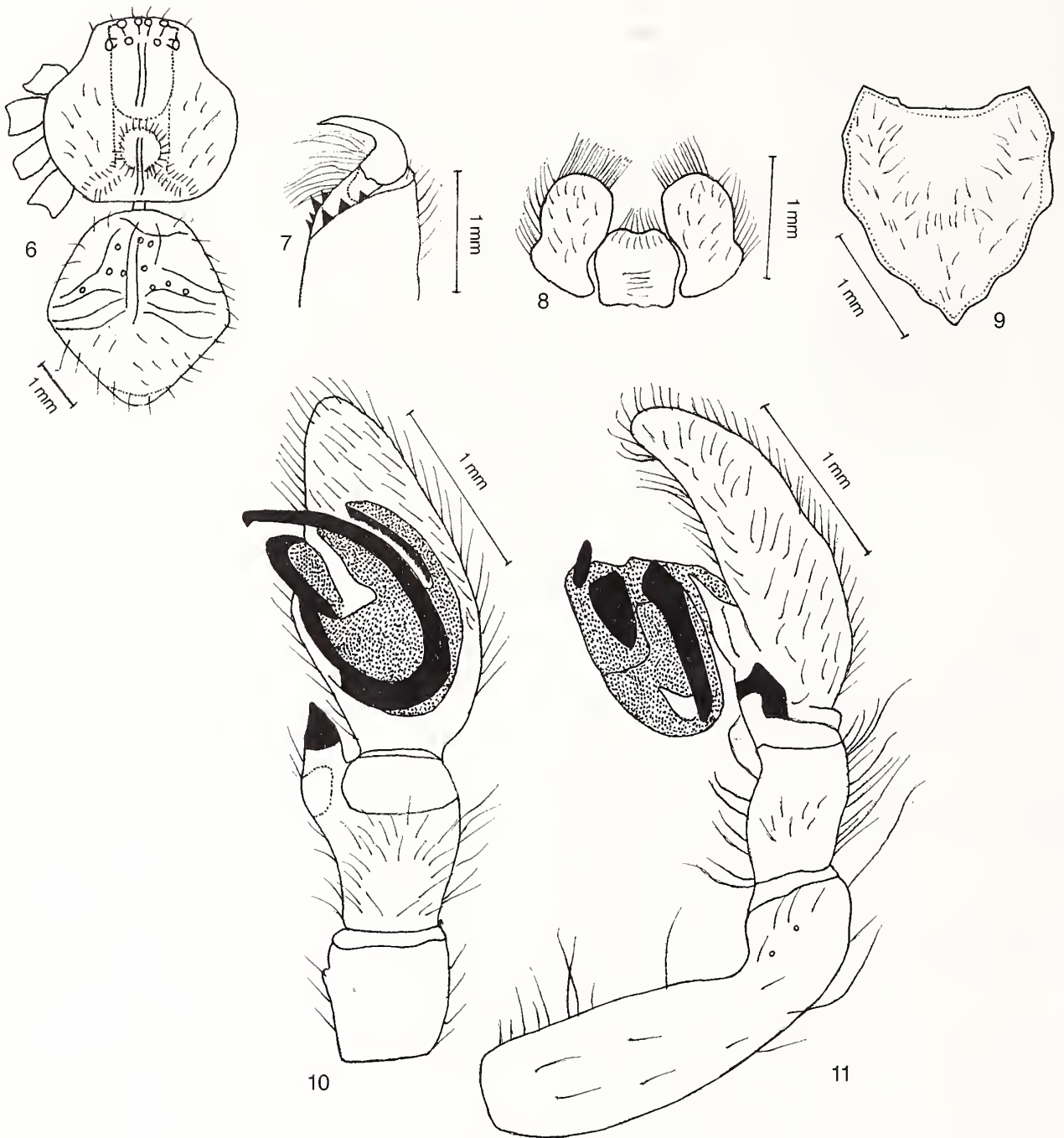
**Distribution:** INDIA: West Bengal.

**Etymology:** The sub-generic and specific names are derived from the names of the country and type locality respectively.

**Discussion:** As the middle eyes of the present species are closer to each other than to the laterals it does not seem to be an ally of *Camaricus* Thorell s. str. However, following the key to the Indian species (Tikader 1980) of *Camaricus* Thorell, the taxon may at best be related to *Camaricus formosus* Thorell because of the general pattern and somewhat similar coloration. The other diagnostic features that support its distinction are: marginally laminate thoracic region, cheliceral inner margin with single tooth, apically blunt sternum, sigilla on abdomen, leg formula 2341 and widely distant epigyne and internal genitalia. Therefore, the present species is considered as new to science.

**Table 1:** Length of legs of ♀ holotype of *Camaricus (Indocamaricus) siltorsus* n. gen. et. sp. n. (in mm)

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	0.86/0.86	1.57/1.57	2.43/2.43	1.29/1.30	1.71/1.70	7.86/7.86
II	1.29/1.29	1.57/1.57	2.71/2.71	1.57/1.58	2.14/2.15	9.28/9.30
III	1.14/1.15	1.57/1.57	2.57/2.58	1.42/1.43	1.86/1.85	8.56/8.58
IV	1.14/1.14	1.57/1.57	2.71/2.71	1.28/1.29	1.71/1.70	8.41/8.41



Figs 6-11: *Misumena nicobarensis* Tikader, male

6. Whole body, 7. Chelicerae, 8. Maxillae and labium 9. Sternum, 10. Male palp (ventral view), 11. Male palp (lateral view)

4. *Misumena*<sup>#</sup> *nicobarensis* Tikader  
(Figs 6-11)

*Misumena nicobarensis* Tikader 1980. Fauna of India, Spiders. Thomisidae 1(1): 102.

**Male:** Measurements (in mm): Total length 7.53; carapace length 3.58, width 3.74; abdomen length 3.74, width 3.47; legs as in Table 2.

Cephalothorax (Fig. 6) brown black, little wider than long,

cephalic region narrower, medially lighter and raised, mid-longitudinally with narrow parallel dark brown lines, those on the thoracic region short, thoracic region medially foveolate, clothed with dense white pubescence; eyes pearly white, in two rows, anterior row more recurved than the posterior row, anterior eyes nearly equidistant, posteromedians smallest, ocular quad rectangular, longer than wide; chelicerae (Fig. 7) dark brown black, robust, inner margin with 3 and outer margin



**Table 2:** Length of legs of ♂ of *Misumena nicobarensis* Tikader (in mm)

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	5.45/5.44	1.82/1.81	5.09/5.08	2.91/2.91	1.82/1.82	17.09/17.06
II	4.55/4.55	1.80/1.80	4.90/4.91	2.73/2.74	1.64/1.63	15.62/15.63
III	2.55/2.56	1.45/1.45	2.18/2.18	0.73/0.74	1.27/1.28	8.18/8.21
IV	3.27/3.28	1.45/1.45	2.55/2.54	2.18/2.18	1.45/1.44	10.90/10.89

with 4 teeth, with long hairs, fangs reddish, small, weakly curved; maxillae and labium (Fig. 8) brownish black, maxillae robust, apically broad, anteriorly scopulate, labium almost square, constricted before middle, anteriorly scopulate; sternum (Fig. 9) reddish, typically heart-shaped, anterior margin concave, posteriorly narrowing, with hairs; legs brown, femora and patella I & II brownish black, tibiae and metatarsi I & II with 4 and 3 pairs of ventral spines respectively, with hairs black, set on black sockets, leg formula 1243.

Abdomen (Fig. 6) brownish with black patches, pentagonal, little longer than wide, medially broadest, anteriorly little concave, posteriorly narrowed. Venter uniformly pale brown. Male palp as in Figs 10 & 11.

**Material examined:** 2 ♀♀/2 ♀♀, Jaldapara, 7.iii.2002/27.iii.2002; 5 ♀♀, Malangi, 7.iii.2002; 1 ♂/1 ♀/1 ♀ Sissamara, 23.iii.2002/25.iii.2002; 2 ♀♀, DDG, 25.iii.2002; 1 ♀, Kunjanagar; 15.iii.2002; 4 ♀♀, TEC, 26.iii.2002; 7 ♀♀, Moiradanga, 27.iii.2002; 1 ♀, Chilapata, Jaldapara Wildlife Sanctuary, Jalpaiguri, 8.vi.2002.

**Distribution:** INDIA: Nicobar Islands (Tikader 1980; Platnick 2002), West Bengal (#new record).

### 5. *Pistius barchensis* Basu

*Pistius barchensis* Basu 1965. Proc. zool. Soc., Calcutta 18: 74.

**Material examined:** 1 ♀, Bania, Jaldapara Wildlife Sanctuary, Jalpaiguri, 8.6.2002.

**Distribution:** INDIA: Uttar Pradesh (Tikader 1980; Platnick 2003), West Bengal (new record).

### 6. *Pistius kalimpus* Tikader

(Figs 12-15)

*Pistius kalimpus* Tikader 1970. Rec. Zool. Surv. India, Calcutta 64: 58.

**Male:** Measurements (in mm): Total length 6.08; carapace length 2.88, width 2.77; abdomen length 3.19, width 2.77; legs as in Table 3.

Cephalothorax (Fig. 12) pale yellow with green spots, each with a pale brown hair, almost as long as wide, oval, somewhat narrow in front, clypeus high, obtuse, margin provided with moderately long hairs; eyes black, set on white tubercles, in two rows; anterior row more strongly recurved than posterior row, ocular quad nearly as long as wide, anteromedians slightly closer than posteromedians, laterals larger, contiguous; chelicerae (Fig. 13) pale yellow, dorsally with green spots, robust, inner margins devoid of any tooth, outer margin with 7 minute denticles extending throughout the length, fangs light brown, small, weakly curved; maxillae and labium (Fig. 14) pale yellow, both elongate, scopulate; sternum (Fig. 15) pale yellow, heart-shaped, anterior margin straight, with very few hairs; legs pale yellow, tibiae and metatarsi I and II ventrally armed with 4 and 6 pairs of spines respectively, leg formula 1234.

Abdomen (Fig. 12) pale with chalk white patches, mixed with black tint, longer than wide, oval, anteriorly straight, posteriorly rather blunt, with brown small erect hairs arising from brown sockets; venter pale medially darker. Male palp not developed fully, therefore not illustrated.

**Material examined:** 1 ♂, Bania, Jaldapara Wildlife Sanctuary, Jalpaiguri, coll. S. Bhattacharjee, 8.vi.2002; 3 ♂♂ (immature), Chilapata, Jaldapara Wildlife Sanctuary, Jalpaiguri, 8.vi.2002.

**Distribution:** INDIA: West Bengal (Tikader 1980; Platnick 2003).

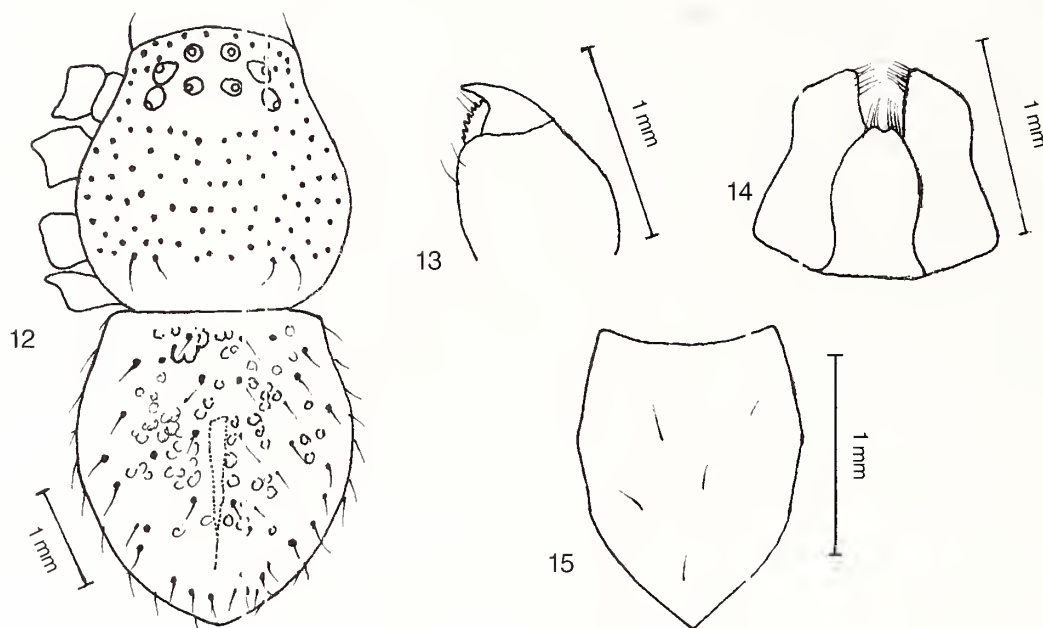
### 7. *Pistius gangulyi* Basu

*Pistius gangulyi* Basu 1965. Proc. Zool. Soc., Calcutta 18: 73.

**Material examined:** 1 ♀, Bengdaki, 8.xi.2001; 1 ♀,

**Table 3:** Length of legs of ♀ *Pistius kalimpus* Tikader (in mm)

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.86/2.86	1.29/1.28	1.86/1.85	1.57/1.56	1.14/1.15	8.72/8.70
II	2.43/2.43	1.14/1.14	2.00/2.00	1.57/1.57	1.14/1.14	8.28/8.28
III	1.43/1.44	0.71/0.70	1.00/1.01	0.71/0.70	0.71/0.70	4.56/4.55
IV	0.86/0.86	0.71/0.71	1.14/1.14	0.71/0.70	0.71/0.71	4.13/4.12



Figs 12-15: *Pistius kalimpus* Tikader, male  
12. Whole body, 13. Chelicerae, 14. Maxillae and labium, 15. Sternum

Moiradanga, Jaldapara Wildlife Sanctuary, Jalpaiguri, 9.xi.2001.

**Distribution:** INDIA: Uttar Pradesh (Tikader 1980; Platnick 2003), West Bengal (new record); China (Platnick 2003).

#### 8. *Pistius roonwali* Basu

*Pistius roonwali* Basu 1964. J. Bengal nat. Hist. Soc., Darjeeling 32 (2): 104.

**Material examined:** 1 ♂, Bania, Jaldapara Wildlife Sanctuary, Jalpaiguri, 7.vi.2002.

**Distribution:** INDIA: Uttar Pradesh (Tikader 1980; Platnick 2003), West Bengal (new record).

#### 9. *Pistius sreepanchanii* Tikader

*Pistius sreepanchanii* Tikader 1971. Mem. zool. Surv. India 15(3): 30.

**Material examined:** 1 ♂, Bania, Jaldapara Wildlife Sanctuary Jalpaiguri, 8.vi.2002.

**Distribution:** INDIA: Meghalaya (Tikader 1980; Platnick 2003), West Bengal (new record).

#### 10. *Thomisus bulani* Tikader

*Thomisus bulani* Tikader 1960. J. Bombay Nat. Hist.

Soc. 57(1): 178.

**Material examined:** 1 ♀, Malangi, Jaldapara Wildlife Sanctuary, Jalpaiguri, 23.iii.2002.

**Distribution:** INDIA: West Bengal (Tikader 1980; Platnick 2003) (dist. Jalpaiguri – new record).

#### 11. *Xysticus bengdakus* sp. nov.

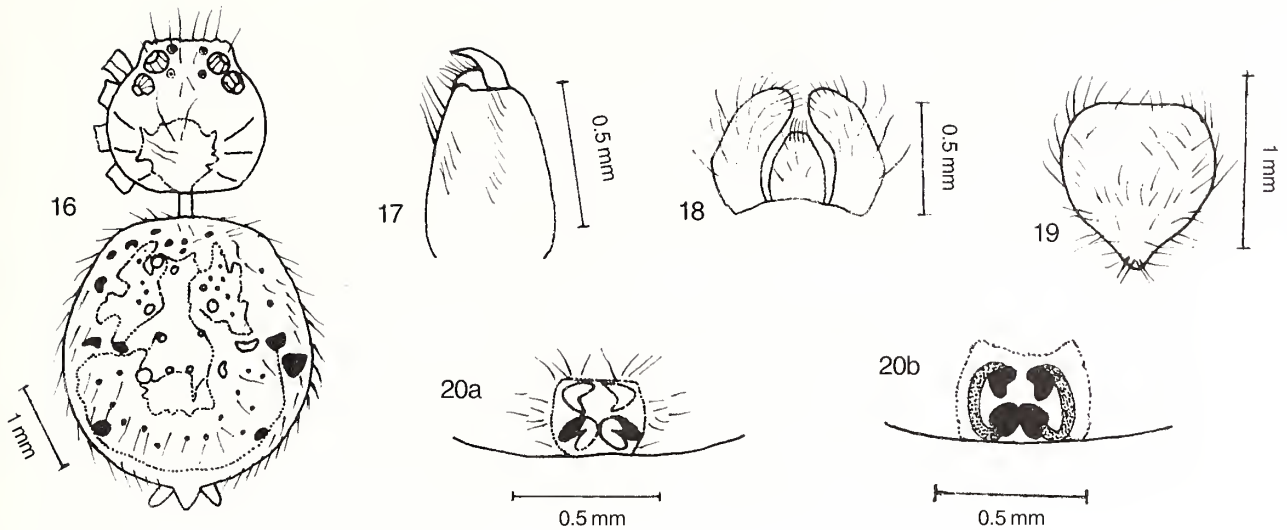
(Figs 16-20)

**Female (Holotype):** Total length 5.42; carapace length 1.77, width 1.77; abdomen length 3.35, width 2.85; legs as in Table 4.

Cephalothorax (Fig. 16): Brown, medially pale, as long as wide, cephalic region high, clothed with few long black hairs; clypeus high, vertical, edge marked by 6 long brown spines, eyes black situated on tubercles, in two rows, both rows strongly recurved, laterals contiguous, ocular quad squarish, slightly longer than wide, with 2 moderately long black hairs, anteromedians closer to laterals than to each other; chelicerae (Fig. 17) light yellow, robust, margins devoid of any tooth, fangs yellow, small, weakly curved; maxillae and labium (Fig. 18) light yellow, small, elongate, anteriorly

Table 4: Length of legs of ♀ holotype of *Xysticus bengdakus* sp.n. (in mm)

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.71/1.72	0.71/0.71	1.71/1.70	1.43/1.43	1.00/1.00	6.56/6.56
II	2.57/2.57	0.71/0.71	2.00/2.00	1.14/1.15	1.00/1.01	7.42/7.44
III	1.57/1.58	0.71/0.71	0.57/0.58	1.00/1.00	1.00/1.00	4.85/4.87
IV	1.43/1.42	0.57/0.57	1.29/1.28	0.86/0.85	1.00/1.00	5.15/5.12

Figs 16-20: *Xysticus bengdakus* sp. n., female holotype

16. Whole body, 17. Chelicerae, 18. Maxillae and labium, 19. Sternum, 20a. Epigynum, 20b. Internal genitalia

scopulate; sternum (Fig. 19) light yellow, typically heart shaped, with hairs; legs light yellow, moderately elongate, tibiae I and II with 2 pairs of ventral spines, leg formula 2143.

Abdomen (Fig. 16) light yellow, with scattered patches of black, chalk white and also brown small sigilla, globose, with black hairs; venter pale yellow, laterally margined by black patches, epigyne and internal genitalia as in Figs 20a & 20b.

**Material examined:** Holotype: 1 ♀, Bengdaki, Jaldapara Wildlife Sanctuary, Jalpaiguri, West Bengal, India, Coll. S. Bhattacharjee, 8.11.2001 (Regn. No. EZC 0006-03).

**Distribution:** INDIA: West Bengal (known only from the type locality).

**Etymology:** Species name is derived from the type locality.

**Remark:** The present species with a pale median area

on cephalothorax and 6 strong forwardly directed spines on clypeus shows a close affinity to *Xysticus kamakhya* Tikader but, is distinct in having anteromedian eyes close to anterolaterals, laterals closely apposed, sternum heart-shaped, very different abdominal decoration, sigilla and epigyne. The species is therefore recognized as new to science.

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